

ABSTRACT OF THE DISCLOSURE

An O-substituted hydroxylamine having the following general formula:



- 5 wherein X is hydrogen or an alkyl; and R¹ is an unsubstituted or substituted phenyl, thienyl, furanyl, pyrrolyl or $\text{-CR}^2\text{=CR}^3\text{R}^4$; wherein R², R³ and R⁴ are hydrogen, halogen or alkyl. The O-substituted hydroxylamine exhibits at least one property selected from the group consisting of: essentially free of hydroxylamine; essentially free of any solvent; a water content of between about
- 10 0% to 90% by weight; and a high strength (as measured by mole of the O-substituted hydroxylamine per gram of sample) of between about 0.5 to 3.3-fold as much as a 40% O-substituted hydroxylamine salt solution, by weight. The O-substituted hydroxylamine further comprising at least one additional property selected from the group consisting of: a purity of between about 98% to 100%,
- 15 based on gas chromatographic area; and a purity drop of less than about 1.2% after 78 days at 40°C when the O-substituted hydroxylamine has a concentration of about 85% in water, based on gas chromatographic area. The O-substituted hydroxylamine is at least one isomer selected from the group consisting of *cis*, *trans* and a mixture thereof. The O-substituted hydroxylamine may also be
- 20 reacidified to an O-substituted hydroxylamine salt free of hydroxylamine.